

**Technical Report 1187**

**Year 2 Assessment of the Unit Focused Stability  
Manning System**

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14. ABSTRACT ( <i>Maximum 200 words</i> ) This is the second in a planned series of reports on research with U.S. Army Alaska's 172d Stryker Brigade Combat Team (SBCT) to identify (a) the impact of personnel stability (under the Unit Focused Stability [UFS] manning system) on small-unit cohesion (cohesiveness), (b) factors that might enhance or detract from (are predictive of) this impact, and (c) lessons learned for enhancing future UFS implementation efforts. Questionnaire responses revealed that cohesion dropped over the 20-month garrison phase of the unit's 36-month lifecycle, the drop was steeper for vertical (Soldier to leader) and organizational (Soldier to unit/Army) than for horizontal (Soldier to Soldier) cohesion, and leader effectiveness and learning environment consistently contributed to the best predictive models of cohesion at each of four measurement periods. Analysis of unit records revealed that turbulence (e.g., unprogrammed gains/losses and duty position changes) was also positively related to cohesion, as long as the former occurred early in the unit's lifecycle and was not excessive. Interviews and focus group discussions revealed that primary UFS implementation concerns were the perceived negative impact of stability on junior officer and midlevel noncommissioned officer career development, confusing initial UFS guidelines, the untimeliness of their dissemination, and the inconsistency of their application. Results were interpreted to suggest that (a) stability under UFS must be coupled with effective leadership and a supportive learning/training environment in order to foster small-unit cohesion, (b) some personnel turbulence early on in a stabilized unit's lifecycle may actually be beneficial to vertical and organizational cohesion, and (c) future UFS implementation should benefit from Army efforts to address identified lessons learned, especially those impacting career development.					
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**Year 2 Assessment of the Unit Focused Stability Manning  
System**

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## YEAR 2 ASSESSMENT OF THE UNIT FOCUSED STABILITY MANNING SYSTEM

### EXECUTIVE SUMMARY

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#### Research Requirement:

The U.S. Army's Human Resources Command (HRC) requested that the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) conduct lifecycle-based assessment to identify (a) the impact of personnel stability (under the Unit Focused Stability [UFS] manning system) on small-unit (i.e., platoon) cohesion over time, (b) factors that might enhance or detract from (are predictive of) this impact, and (c) lessons learned for enhancing future UFS implementation. U.S. Army Alaska's 172d Stryker Brigade Combat Team (SBCT), the first unit to be manned under UFS, was selected by the Army to support this assessment

#### Procedure:

Data were collected by means of a coordinated series of paper-and-pencil questionnaires, individual interviews, and focus group discussions administered/conducted at 3, 9, 18 and 20 months into the garrison phase of the 172d SBCT's scheduled 36-month operational lifecycle. Questionnaires included demographic items and assessment scales designed to measure horizontal (Soldier to Soldier), vertical (Soldier to leader), and organizational (Soldier to unit/Army) cohesion, as well as eight variables/factors (e.g., leader effectiveness and learning environment) designed to measure unit climate. Interviews and focus group discussions were used to identify UFS implementation concerns and to help with the interpretation of questionnaire results. Unit records were used to assess the relation between cohesion and personnel turbulence (e.g., unprogrammed gains/losses and duty position changes) that occurred at platoon level during the 3 months preceding the second (9-month) and third (18-month) data collection periods.

#### Findings:

Questionnaire responses revealed that (a) platoon-level cohesion started out high and dropped significantly over time, with the drop being steeper for vertical and organizational than for horizontal cohesion, and (b) all measured unit climate variables were positively related to each cohesion dimension, with leadership effectiveness and learning environment consistently contributing to the best predictive model at each of the four data collection periods. Analysis of unit records revealed that vertical and organizational cohesion were positively related to turbulence, especially in the form of interplatoon team leader changes, as long as it occurred early in the unit's lifecycle and was not excessive. Interviews and focus group discussions revealed that most often voiced UFS implementation concerns were the perceived negative impact of stability on junior officer and midlevel noncommissioned officer career development, confusing initial UFS guidelines, the untimeliness of their dissemination, and the inconsistency of their application. Complicating implementation were a number of location- (i.e., Alaska) and unit-related factors such as equipment (e.g., Stryker vehicles) unavailability/inoperability, infrastructure inadequacies, and significant challenges associated with training in extremely cold weather.

## Utilization and Dissemination of Findings:

The Department of the Army, G1, and Commanding General, HRC, who are sponsoring this research, have been presented with its findings to date. With this information in hand, and supporting evidence from other sources, Army decision makers can now be reasonably confident that (a) effective leadership and a positive learning environment are needed to develop and sustain small-unit (platoon-level) cohesion (especially vertical and organizational) in garrison even with heightened personnel stability under UFS, (b) cohesion is likely to benefit from some turbulence as long as it is not excessive and occurs relatively early in the unit's lifecycle, and (c) addressing the concerns expressed herein by stabilized Soldiers should help lead the way to improved UFS implementation in the future. The next report of this series will assess the impact of UFS on cohesion during the first half of the 172d SBCT's overseas employment (i.e., deployment + 6 months) phase of its lifecycle.



## YEAR 2 ASSESSMENT OF THE UNIT FOCUSED STABILITY MANNING SYSTEM

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## Year 2 Assessment of the Unit Focused Stability Manning System

### Introduction

In October of 2002, the Vice Chief of Staff of the Army, created Task Force Stabilization (TFS) and charged it with the mission to develop a manning system that would minimize personnel turbulence in combat units. In response, TFS developed Unit Focused Stability (UFS), a manning system where, unlike under the traditional Individual Replacement System (IRS) where Soldiers are swapped in and out of units on a daily basis like "spare parts" (Furukawa, Ingraham, Kirkland, Marlowe, Martin, & Schneider, 1987), Soldiers assemble, train, and deploy together with their leaders during the operational lifecycle of their unit (Headquarters, Department of the Army, 2006; Task Force Stabilization, 2004, March 16; 2004, May 1).

The Army expects heightened stability under UFS to foster cohesion (or cohesiveness) over time and, in turn, lead to enhanced unit performance (e.g., Thurman, 1989). While the notion that enhanced cohesion will have a positive impact on performance has received empirical support (e.g., Ingraham & Manning, 1981; Manning & Ingraham, 1987, Mullen & Copper, 1994; Oliver, Harmon, Hoover, Hayes, & Pandhi, 1999; Levine, Moreland, Argote, & Carley, 2005; Moskos, 1969; Siebold, 1999), that linking heightened stability to enhanced cohesion has not.

Past research into the relation between stability and cohesion has been inconclusive. For most units stabilized in the 1980s under Project COHORT (Cohesion, Operational Readiness, and Training), for example, cohesion started out high and dropped over time (e.g., Henderson, 1985; Thurman, 1989; Vaitkus, 1994). For others, however, cohesion followed a U-shaped pattern, (i.e., started out high, fell to a low point about midway into the units' lifecycle, and then rebounded somewhat toward the end (Siebold, 1989). In contrast, cohesion within a medical unit on a 6-month overseas peacekeeping mission followed the opposite inverted U-shaped pattern, (i.e., started out low, peaked at midmission, and tailed off at mission's end) (Bartone & Adler, 1999). Conspicuously absent has been the monotonically increasing pattern of cohesion the Army expects to occur as Soldiers spend more and more time together in the same unit. Clearly, one cannot accurately predict what the temporal course of cohesion will be under UFS on the basis of past research findings.

Given this uncertainty, Human Resources Command (HRC) asked the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) to (a) assess the impact of UFS and cohesion over a unit's entire operational lifecycle, (b) identify factors/variables that may enhance or detract from (are predictive of) this impact, and (c) document lessons learned for improving future UFS implementation efforts. To this end, assessment-oriented research was conducted to answer the following questions:

1. How does cohesion change over the lifecycle of a UFS unit?
2. What variables are related to (and possibly influence) cohesion over this lifecycle?
3. How are personnel turbulence and cohesion related under UFS?
4. Is UFS unit performance related to cohesion?
5. What lessons can be learned for enhancing future UFS implementation?

This report is the second in a planned series designed to answer these questions. In doing so, it integrates and extends the findings of the first report (Smith & Hagman, 2004).

## Method

As recommended by others (e.g., Henderson, 1985; Siebold, 1999; Siebold & Kelly, 1988a, 1988b), cohesion was assessed where it occurs--at the small-unit (i.e., platoon) level. Assessment involved the use of paper-and-pencil questionnaires, interviews, focus group discussions, and specially designed personnel turbulence tracking forms. Questionnaires and turbulence data were used to answer questions related to cohesion and its determinants/predictors (Questions 1-4). Interview and focus group information were used to help interpret questionnaire findings and identify UFS implementation-related lessons learned (Question 5). Participation in the assessment process was voluntary. All obtained information was treated as confidential.

### *Participants*

A total of 433 Soldiers and leaders from 60 combat arms platoons organic to three infantry battalions, one field artillery battalion, and one cavalry squadron of U.S. Army Alaska's 172d Stryker Brigade Combat Team (SBCT), the first unit to be manned under UFS, filled out questionnaires (see Table 1 for respondent demographics). One-hundred and sixty two company- and platoon-level personnel attended focus group discussions, 59 brigade- through company-level command group and primary staff members participated in the interviews, and all platoons collected turbulence information.

### *Design and Procedure*

A longitudinal assessment design was used where the same participants were surveyed via questionnaire at 3, 9, 18, and 20 months (hereafter referred to as measurement periods M1, M2, M3, and M4) into the garrison phase of the 172d SBCT's scheduled 36-month operational lifecycle. An on-site assessment team member supervised questionnaire administration, with unit sergeants major (SGMs) or first sergeants (1SGTs) responsible for questionnaire distribution and collection. After taking 30-40 minutes to complete the questionnaires, respondents sealed them in envelopes and printed the first letter of their last name and the last four digits of their social security number on the front of the envelopes to enable longitudinal tracking. Identical questionnaires were used at each measurement period, with the exception of M4 when an item was added at the end to assess collective performance during a Joint Readiness Training Center (JRTC) rotation completed 3 weeks earlier.

Interviews were conducted on an individual basis, held to an hour, and conducted at M1, M2, and M4 during the same 2-week periods set aside for questionnaire administration. Interview questions varied across measurement periods to allow flexibility of topic coverage and elaboration on information obtained from previous questionnaires, interviews, and focus groups. During interviews, one member of the assessment team asked the questions while the other took notes, which typically were transcribed later the same day.

Table 1  
Questionnaire Respondent (N = 433) Demographics

Category	%
Sex	
Male	99.8
Female	0.2
Rank	
Enlisted (E1-E4)	71
NCO (E5-E8)	26
Officer (O1-O3)	3
Age	
Under 20	5
20-29	82
30-39	12
40+	1
Race <sup>a</sup>	
Hispanic	14
American Indian or Alaskan Native	3
Asian	2
Black or African American	7
Pacific Islander	1
White	86
Education	
High School or Less	63
Some College	32
Bachelor's Degree	5
Graduate Training	
Marital Status	
Single	48
Married	49
Divorced or Separated	3
Previous Member of 172d Separate Infantry Brigade (SIB)	
Yes	29
No	71
SBCT Assignment Status	
Volunteer	38
Assigned	62
Residence	
On Post	83
Off Post	17

<sup>a</sup>Percentages sum to > 100 because of multiple responses.

Up to nine focus group discussion sessions were held during the same 2-week periods scheduled for interviews. Each session ran about an hour and was limited to six participants who were selected at random. Participants were segregated by duty position (i.e., squad members, squad leaders, platoon sergeants, platoon leaders, company 1SGTs) and assigned accordingly to separate groups. During each session, one member of the assessment team acted as facilitator while the other took notes, which typically were transcribed later the same day.

## *Questionnaires*

The questionnaires contained items on demographics (e.g., age, gender, education) and military status (e.g., rank, unit, duty position), hereafter both are simply referred to as demographic items, and assessment scales covering cohesion, attitude towards stability, and unit climate variables (i.e., leader effectiveness, learning environment, job motivation, job satisfaction, morale, and well-being). The latter were selected on the basis of their suspected importance to cohesion development (e.g., Bartone & Adler, 1999; Griffith, 1988; Kirkland, Bartone, & Marlowe, 1993; Oliver, et al., 1999) and their susceptibility to potential modification through Army intervention (e.g., training).

The cohesion scales consisted of items from Siebold and Kelly's (1988a) Platoon Cohesion Index, with minor wording changes made to optimize fit with the current application. Siebold and Kelly (1988a) based their index on the notion that unit cohesion is composed of three measurable dimensions of bonding: between peers (Soldier to Soldier), between leaders and their subordinates (Soldier to leader, and vice versa), and between all Soldiers and their unit (Soldier to unit/Army). These dimensions were labeled as horizontal, vertical, and organizational cohesion, respectively, with each having its own affective and instrumental aspects.

Each dimension was measured accordingly: horizontal-affective by the extent to which peers trusted and cared about one another, horizontal-instrumental by the extent to which peers worked together to get the job done, vertical-affective by the extent to which leaders and Soldiers trusted and cared about each other, vertical-instrumental by the extent to which leaders were competent to lead Soldiers in training and in combat, organizational-affective by the extent to which Soldiers identified with their unit and what it stands for (e.g., were proud of their unit, accepted being labeled as a unit member, supported unit values, and felt a sense of pride in unit membership), organizational-instrumental by the extent to which Soldiers worked to achieve unit goals in exchange for the unit facilitating attainment of Soldier needs and goals (i.e., Soldiers will do their best for the unit if the unit does its best for them).

The scale items used to measure these three dimensions are shown in Table 2. The psychometric properties of each scale, as well as additional information concerning scale development, are reported by Siebold and Kelly (1988b).

The scales used to assess unit climate were either taken directly from Siebold (1996) (i.e., job motivation), adapted from Siebold (1996) or the Sample Survey of Military Personnel (U.S. Army Research Institute for the Behavioral and Social Sciences, 2003) (i.e., leader effectiveness, learning environment, job motivation and satisfaction, morale, and well-being), or developed anew (attitude towards stability) specifically for this assessment. Representative items from these scales, listed in order of highest item-scale correlations at M1 (in parentheses), are shown in Table 3. Cronbach's alpha and split-half reliability coefficients for all scales are reported in Smith and Hagman (2004).



Table 2  
Cohesion Scale Items

<i>Horizontal</i>	
In my platoon, Soldiers ...	<ul style="list-style-type: none"> <li>• Trust each other.</li> <li>• Care about each other.</li> <li>• Work well together to get the job done.</li> <li>• Work well as a team.</li> </ul>
<i>Vertical</i>	
In my platoon, Soldiers ...	<ul style="list-style-type: none"> <li>• Trust their leaders.</li> <li>• Care about their leaders.</li> <li>• Can get help from their leaders on personal problems.</li> <li>• Train well together with their leaders.</li> </ul>
In my platoon, Leaders ...	<ul style="list-style-type: none"> <li>• Have the skills and abilities to lead Soldiers in combat.</li> </ul>
<i>Organizational</i>	
In my platoon, Soldiers ...	<ul style="list-style-type: none"> <li>• Feel they play an important part in accomplishing the unit's mission.</li> <li>• Feel proud to be members of the unit.</li> <li>• Know what is expected of them.</li> <li>• Know the behaviors that will get them in trouble or punished.</li> <li>• Are satisfied with the time available for family, friends, and personal needs.</li> <li>• Are satisfied with unit social events.</li> <li>• Feel they are serving their country.</li> <li>• Have opportunities to better themselves.</li> <li>• Set the example for Army values.</li> </ul>
In my platoon, Leaders ...	<ul style="list-style-type: none"> <li>• Set the example for Army values of loyalty, duty, respect, selfless service, honor, integrity, and personal courage.</li> </ul>

Questionnaire scale items were responded to using a five-point, Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Most questions asked respondents to act as observers of their respective platoons and to rate the level of the referent object (e.g., teamwork, trust, and caring) with respect to those platoons. Survey participants were also asked at M4 to rate the quality of their platoon's JRTC collective task performance. The last page of the questionnaire was left blank in order to give respondents an open opportunity to elaborate on any topic(s) of concern.

Table 3  
Representative Items from the Unit Climate Scales

*Attitude Towards Stability (2 items)*

- I think the goal of stabilizing Soldiers in the 172d SBCT is a good idea. (.77)
- I think the goal of stabilizing Leaders in the 172d SBCT is a good idea. (.77)

*Leader Effectiveness (15 items)*

Leaders in my platoon ...

- Show they are the kind of leaders one would want to serve under in combat. (.87)
- Work hard and try to do as good a job as possible. (.85)
- Demonstrate they have the expertise to show their Soldiers how best to perform a task. (.85)

*Learning Environment (10 items)*

In my platoon, Soldiers ...

- Feel leaders have confidence that their Soldiers will do their jobs right. (.82)
- Are provided with guidance when assigned new duties. (.79)
- Feel that the emphasis is on getting things right, and not just on looking good. (.79)

*Job Motivation (4 items)*

- I am very personally involved in my work. (.83)
- I look forward to starting work each day. (.82)
- I don't mind taking on extra duties and responsibilities. (.74)

*Job Satisfaction (8 items)*

I am satisfied with ...

- The quality of my training. (.77)
- The number of personnel available to support my training. (.77)
- My education/training opportunities. (.74)

*Morale (2 items)*

- The morale level in my unit is good. (.92)
- My morale level is good. (.92)

*Personal Well-Being (5 item)*

- My mental health status is good. (.77)
- I am satisfied with the Army as a way of life. (.74)
- My unit works hard to provide equal opportunity for all. (.73)

*Spouse/Family Well-Being (9 items)*

- The quality of Army child care programs is good. (.75)
- The availability of Army child care programs is good. (.74)
- The availability of family medical care is good. (.71)

### *Turbulence Data*

Although the entire 172d SBCT was technically stabilized under UFS, it was anticipated that some platoons would experience personnel turbulence as time wore on as a result of unprogrammed gains/losses (external turbulence) and duty position changes (internal turbulence). It was also anticipated that some units would experience more turbulence than others. Thus, in anticipation of an opportunity to assess the relation between turbulence and cohesion, platoon-level turbulence was categorized into four types: External arrivals/gains (Type 1), external departures/losses (Type 2), internal interplatoon moves (Type 3), and internal intraplatoon moves (Type 4).

Turbulence data were collected monthly during the 3-month period preceding both M2 and M3 and classified by type (1, 2, 3, or 4), and duty position (team member, team leader, squad leader, platoon sergeant, and platoon leader). Missing data (5%) were interpolated using the average turbulence reported for the same platoon during adjacent months. If the missing data were for the first or last month of the period, the interpolated value was calculated as the average of the two following or preceding months, respectively.

### *Treatment of Data*

Analyses of variance (ANOVAs) of individual Soldier data were used to compare the different levels of cohesion reported (i.e., perceived) to occur over time (Question 1), correlation/regression analyses of individual Soldier- and platoon-level data to identify variables related to (Questions 2-3), or influenced by (Question 4) cohesion, and content analyses of interview and focus group response protocols to identify lessons learned (Question 5). The rejection for all statistical analyses was .01

*Questionnaires.* Questionnaire data were machine scored, entered into a Statistical Package for the Social Sciences for Windows (SPSS, 2004) database, and examined for quality prior to the start of analysis. Three percent of the records obtained at each questionnaire administration were discarded because they had no response variability (i.e., the same answer was given to every cohesion-related question) or no coded personal tracking identifier.

*Interview and focus group data.* Four members of the assessment team analyzed interview and focus group response protocols for content and developed a master list of issues voiced at each measurement period. This information was used to help explain questionnaire responses and formulate lessons learned.

*Turbulence data.* Turbulence data were structured and analyzed at the group (platoon) level. Individual Soldier responses were, therefore, aggregated on the basis of platoon membership to enable calculation of correlations between platoon-level turbulence and average platoon cohesion.

## Results

### *Question 1: How Does Cohesion Change Over the Lifecycle of a UFS Unit?*

A 4 (measurement period; M1-M4) x 3 (cohesion dimension; horizontal, vertical, and organizational) x 2 (duty position; leaders [platoon leaders, platoon sergeant, squad/team leaders], and Soldiers [squad/team members]) mixed factorial ANOVA with repeated measures on the first two variables was used to examine this question. The results of which revealed significant main effects of cohesion dimension,  $F(2, 862) = 86.84$ , and measurement period,  $F(3, 1293) = 58.96$ , as well as significant Measurement Period x Cohesion Dimension,  $F(6, 2586) = 32.78$ , and Cohesion Dimension x Duty Position,  $F(2, 862) = 10.48$ , interactions. Post hoc Tukey Honestly Significant Difference tests ( $df = 432$ ) (Sprinthall, 2003) of simple effects associated with the Measurement Period x Cohesion Dimension interaction (see Figure 1) revealed that at M1, vertical was greater than both horizontal and organizational cohesion, while the latter two did not differ. By M2, vertical cohesion had dropped to a point that did not differ from horizontal, while both horizontal and vertical significantly exceeded organizational cohesion. At M3, horizontal rose slightly while vertical and organizational cohesion continued their decline. As a result, horizontal cohesion was significantly higher than either vertical or organizational, while vertical continued to be higher than organizational. Although horizontal cohesion dropped from M3 to M4, it was still higher than vertical or organizational, and vertical continued to exceed organizational cohesion as well. Thus, cohesion generally started out high and then dropped over the ensuing 20 months that Soldiers were stabilized in garrison. This drop was greater for vertical and organizational cohesion, however, than it was for horizontal cohesion.

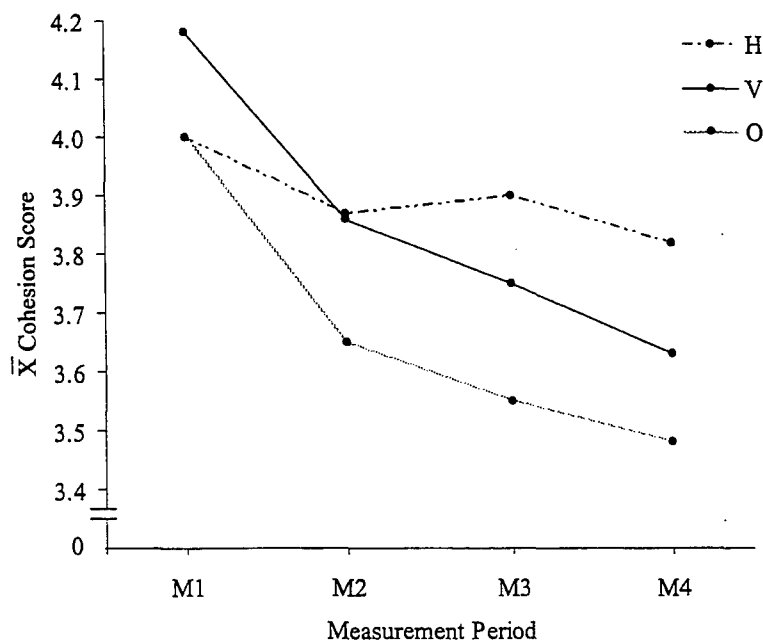


Figure 1. The course of horizontal (H), vertical (V), and organizational (O) cohesion over time.

The significant Cohesion Dimension x Duty Position interaction revealed that leader ratings tended to be higher than Soldiers ratings on both vertical and organizational cohesion, whereas Soldier ratings were higher than leader ratings on horizontal cohesion (see Figure 2).

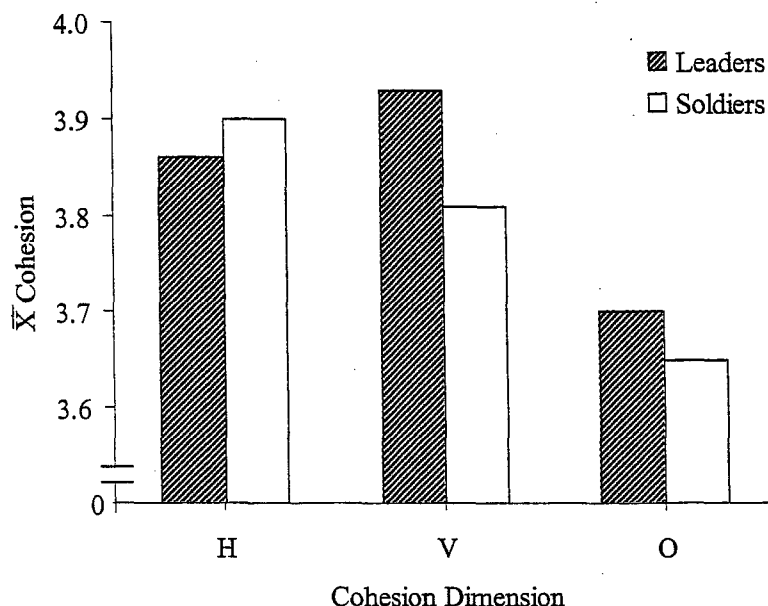


Figure 2. Leader and Soldier ratings of horizontal (H), vertical (V), and organizational (O) cohesion.

*Question 2: What Factors Are Related to (and Possibly Influence) Cohesion Over a UFS Unit's Lifecycle?*

To examine this question, correlational analyses were used to assess the relation between overall cohesion (i.e., all cohesion scale items combined) and a variety of both unit climate and demographic variables at each measurement period. These analyses were then extended to assess the relation between these same variables and each of the three cohesion dimensions. In general, the data were consistent in revealing that cohesion was more highly related to unit climate variables than to demographic variables and that the relative associative superiority of the former remained stable over time.

*Overall Cohesion*

*Unit climate variables.* All unit climate variables were positively related to overall cohesion and statistically significant at all measurement periods. Table 4 lists these variables in the order of their strength of relation with overall cohesion at M1. The mean correlations between unit climate variables and overall cohesion at M1-M4 were  $r = .57, .59, .59$ , and  $.58$ , respectively. Spearman rank-order correlations between M1 and M2, M2 and M3, M3 and M4, and M1 and M4 were all significant, with  $r = .91, .98, .95$ , and  $.83$ , respectively. Thus, the relations found between overall cohesion and unit climate variables were both reliable and stable from one measurement period to the next.

Table 4  
Correlations Between Predictor Variables and Overall Cohesion  
at Each Measurement Period

Predictor Variables	Overall Cohesion			
	M1	M2	M3	M4
Unit Climate				
Learning Environment	.80*	.77*	.80*	.75*
Leader Effectiveness	.75*	.76*	.81*	.78*
Job Satisfaction	.66*	.67*	.64*	.63*
Personal Well-Being	.63*	.57*	.58*	.61*
Morale	.61*	.62*	.63*	.55*
Job Motivation	.52*	.62*	.63*	.65*
Family Well-Being	.32*	.37*	.34*	.34*
Attitude Towards Stability	.25*	.30*	.28*	.29*
Demographic				
Expected Years of Service	.04	.13*	.20*	.24*
Paygrade	-.04	.06	.16*	.19*
Age	.02	.02	.18*	.14*
Duty Position	.02	-.02	-.13*	-.17*
Rank	-.01	.08	.17*	.20*

Note: This and all subsequent tables represent  $p \leq .01$  with \*.

Entries in Tables 4-7 have a maximum  $N$  of 433. Actual  $n$  for any particular variable was 433 minus the number of Soldiers missing data on that variable. For M1 morale, for instance,  $n = 431$ . With the exception of family well-being,  $n$  values fell within a narrow range. At M1, for example, this range was 419-431. Thus,  $n$  values were omitted from the table to enhance readability. Family well-being  $n$  values, on the other hand, were substantially lower because only Soldiers with families were asked the items comprising this scale. At M1 the family well-being correlation with cohesion was based on  $n = 220$ .

*Demographic variables.* Relations found between demographic variables and overall cohesion were less robust. Table 4 lists these variables only if statistical significance with overall cohesion was achieved on one or more measurement period. The average absolute correlations between demographic variables and overall cohesion at M1, M2, M3, and M4 were  $r = .03, .06, .17$ , and  $.19$ , respectively. Spearman rank-order correlations between M1 and M2, M2 and M3, M3 and M4, and M1 and M4 were  $r = .19, .51, .40$ , and  $.19$ , respectively. Despite the increasing correlational values over time, even the strongest demographic variable (expected years of service at M4) fell short of the weakest unit climate variable (attitude towards stability at M1) in its correlation with overall cohesion.

### Horizontal Cohesion

*Unit climate variables.* The average absolute correlations between unit climate variables and horizontal cohesion at M1-M4 were  $r = .39, .41, .40$ , and  $.41$ , respectively (see Table 5). Spearman rank-order correlations between M1 and M2, M2 and M3, M3 and M4, and M1 and M4 were  $r = .94, .97, .91$ , and  $.81$ , respectively. All correlations were statistically significant. Thus, the relations found between horizontal cohesion and unit climate variables were also reliable and stable across the four measurement periods.

*Demographic variables.* Table 5 lists demographic variables only if statistical significance with overall cohesion was achieved on one or more measurement period. Despite some significant differences found at M3 and M4 for individual variables, the average absolute correlations between demographic variables and horizontal cohesion at M1-M4 were all nonsignificant.

Table 5  
Correlations Between Predictor Variables and Horizontal Cohesion  
at Each Measurement Period

Predictor Variables	Horizontal Cohesion			
	M1	M2	M3	M4
Unit Climate				
Learning Environment	.61*	.57*	.57*	.55*
Leader Effectiveness	.50*	.56*	.52*	.58*
Job Satisfaction	.44*	.46*	.44*	.42*
Personal Well-Being	.44*	.41*	.39*	.46*
Morale	.44*	.41*	.40*	.34*
Job Motivation	.35*	.45*	.45*	.48*
Family Well-Being	.21*	.22*	.28*	.23*
Attitude Towards Stability	.15*	.19*	.17*	.20*
Demographic				
Expected Years of Service	-.03	.07	.08	.15*
Paygrade	.03	.05	.11	.13*
Age	.03	.02	.14*	.11
Duty Position	-.01	-.03	-.08	-.12*
Education	.00	.07	.05	.13*

### Vertical Cohesion

*Unit climate variables.* The average correlations between unit climate variables and vertical cohesion at M1-M4 were  $r = .52, .55, .53$ , and  $.51$ , respectively (see Table 6). Spearman rank-order correlations between M1 and M2, M2 and M3, M3 and M4, and M1 and M4 were  $r = .89, .84, .79$ , and  $.92$ , respectively. All correlations were statistically significant. Thus, the relation

between vertical cohesion and unit climate variables was not only reliable, but also stable over time.

*Demographic variables.* The average absolute correlations between demographic variables and vertical cohesion at M1-M4 were  $r = .05, .09, .21$ , and  $.22$ , respectively, with only the latter two values reaching statistical significance (see Table 6). Spearman rank-order correlations between M1 and M2, M2 and M3, M3 and M4, and M1 and M4 were  $r = .50, .76, .57$ , and  $.40$ , respectively. Thus, despite statistically significant relations found at M3 and M4, the relation between demographic variables and vertical cohesion was weak and only moderately stable over time.

Table 6  
Correlations Between Predictor Variables and Vertical Cohesion  
at Each Measurement Period

Predictor Variables	Vertical Cohesion			
	M1	M2	M3	M4
Unit Climate				
Leader Effectiveness	.77*	.79*	.84*	.80*
Learning Environment	.72*	.74*	.77*	.70*
Personal Well-Being	.60*	.55*	.54*	.56*
Job Satisfaction	.57*	.64*	.54*	.55*
Morale	.55*	.55*	.55*	.46*
Job Motivation	.47*	.57*	.55*	.55*
Attitude Towards Stability	.25*	.24*	.25*	.25*
Family Well-Being	.23*	.33*	.22*	.22*
Demographic				
Paygrade	-.08	.09	.21*	.24*
Expected Years of Service	.06	.14*	.22*	.23*
Duty Position	.06	-.04	-.18*	-.20*
Rank	-.03	.13*	.22*	.25*
Age	.02	.03	.21*	.18*

### Organizational Cohesion

*Unit climate variables.* The average correlations between unit climate variables and organizational cohesion at M1-M4 were  $r = .58, .59, .60$ , and  $.58$ , respectively (see Table 7). Spearman rank-order correlations between M1 and M2, M2 and M3, M3 and M4, and M1-M4 were  $r = .93, .99, .93$ , and  $.87$ , respectively. All correlations were statistically significant. Thus, the relation between unit climate variables and organizational cohesion was both reliable and stable.

*Demographic variables.* The average absolute correlations between demographic variables and organizational cohesion at M1, M2, M3, and M4 were  $r = .03, .05, .15$ , and  $.16$ , respectively, with only the latter two being statistically significant (see Table 7). Spearman rank-order



correlations between M1 and M2, M2 and M3, M3 and M4, and M1 and M4 were, respectively,  $r = .21, .14, .40$ , and  $.21$ . Thus, the relations between demographic variables and organizational cohesion were at best weak and relatively unstable.

Table 7  
Correlations Between Predictor Variables and Organizational Cohesion  
at Each Measurement Period

Predictor Variables	Organizational Cohesion			
	M1	M2	M3	M4
Unit Climate				
Learning Environment	.79*	.75*	.77*	.73*
Leader Effectiveness	.73*	.70*	.77*	.71*
Job Satisfaction	.69*	.67*	.67*	.65*
Personal Well-Being	.63*	.56*	.58*	.60*
Morale	.62*	.64*	.65*	.59*
Job Motivation	.53*	.63*	.65*	.65*
Family Well-Being	.36*	.41*	.38*	.38*
Attitude Towards Stability	.25*	.33*	.30*	.29*
Demographic				
Expected Years of Service	.05	.12*	.20*	.23*
Paygrade	-.04	.04	.12*	.16*
Age	.02	.01	.16*	.11
Duty Position	.01	-.01	.11	-.14*
Rank	-.01	.05	.15*	.17*

#### *Unit Climate vs. Demographic Variables*

The average absolute correlation between unit climate variables and cohesion combined across all cohesion dimensions at M1-M4 was moderately positive ( $r = .53$ ). Learning environment and leader effectiveness were most closely related to cohesion at all four measurement periods. Job satisfaction, job motivation, morale and personal well-being formed a second tier of potential predictors, always related to cohesion but to a lesser degree than learning environment and leader effectiveness. A third, noticeably weaker, tier of predictors consisted of family well-being and attitude towards stability.

The average absolute correlation between demographic variables and cohesion combined across all cohesion dimensions at M1-M4 was only  $r = .11$ . Moreover, while Spearman rank-order correlations between M1 and M2, M2 and M3, M3 and M4, and M1 and M4 were stable and robust for unit climate variables but the correlations were weak and inconsistent for demographic variables. Thus, only the former set of variables was expected to have predictive utility.

### *Cohesion Prediction Models*

Prediction models were developed for overall, horizontal, vertical, and organizational cohesion at each of the four measurement periods. To develop each model, all unit climate variables (excluding family well-being, which was withheld because of restricted sample size) and all demographic variables with a significant relation to the criterion (see Tables 4-7) were made available to iterative stepwise multiple regression routines. That is, all unit climate and no demographic variables were made available for the M1 overall cohesion model. All unit climate variables plus expected years of service (the only demographic variable significantly related to the criterion) were made available for the M2 model. All unit climate and demographic variables listed in Table 4 were made available for the M3 and M4 models. Results from all 16 individual prediction models (see Appendix A) indicated that the vast majority of all predicted variance in any model was accounted for by the first three predictors to enter the equation.

*Overall cohesion.* M1 through M3 overall cohesion prediction models were highly similar, containing the same top three predictors (i.e., learning environment, leader effectiveness, and morale), although their order of entry varied somewhat depending on measurement period. At M4, learning environment and leader effectiveness continued to be important predictors, but morale was replaced by job motivation. Thus, as shown in Table 8, across all measurement periods leader effectiveness and learning environment were important predictors of overall cohesion, and in three of the four models these two variables were joined by morale to create parsimonious three-predictor cohesion models. The mean  $R^2$  value for the three best predictors was .69. They accounted for almost all (98%) of the variance explained by the full predictor models for M1-M4, respectively (see Appendix A for full model specifications.)

Table 8  
Summary of Overall Cohesion Prediction Models

Overall Cohesion Prediction Model	First Three Predictors	$R^2$ Based on Three Predictors	$R^2$ Based on Full Model
M1	Learning Environment Leader Effectiveness Morale	.70	.71
M2	Learning Environment Leader Effectiveness Morale	.68	.70
M3	Leader Effectiveness Learning Environment Morale	.72	.73
M4	Leader Effectiveness Job Motivation Learning Environment	.67	.69

*Horizontal cohesion.* The predictor most consistently associated with horizontal cohesion was learning environment, which appeared in all four models and was the dominant predictor in three of the four (Table 9). Only in the M4 model did learning environment drop from its dominant position to be replaced by leader effectiveness. The M1 and M3 models contained only two predictors, and the M2 and M4 models contained only three predictors. This is in contrast to the prediction of overall cohesion, where either four or five predictors entered the full models. Note that  $R^2$  values in the third column of Table 9 are substantially less than corresponding values for the overall cohesion models in Table 8. This is consistent with the lower zero-order correlations observed between unit climate variables and horizontal cohesion.

Table 9  
Summary of Horizontal Cohesion Prediction Models

Horizontal Cohesion Prediction Model	First Three Predictors	$R^2$ Based on Two or Three Predictors	$R^2$ Based on Full Model
M1	Learning Environment Morale	.37	.37
M2	Learning Environment Leader Effectiveness Job Motivation	.36	.36
M3	Learning Environment Job Motivation	.35	.35
M4	Leader Effectiveness Job Motivation Learning Environment	.36	.36

*Vertical cohesion.* In contrast with the decreased  $R^2$  values in Table 9 for horizontal cohesion, corresponding values in Table 10 for the vertical cohesion prediction models were about as robust as those in Table 8 for the overall cohesion models. The dominant predictor in all four vertical cohesion models was leader effectiveness. This predictor entered all four models first, producing an average  $R = .80$  and  $R^2 = .64$ . Full models contained from two (M3) to six (M1) predictors. Regardless of the number of predictors in the full model, however, leader effectiveness accounted for the greatest proportion of explained variance across all four models. The second most influential predictor was learning environment, which appeared in three of the four models.

*Organizational cohesion.* Table 11 lists the first three predictors to enter each of the four organizational cohesion prediction models. Learning environment appeared in all four models and was the first predictor to enter in three of four models. Leader effectiveness appeared in three of the four models and was the dominant predictor in the M3 model. Morale also appeared in three of the four models, but always entered in second or third position.

Table 10  
Summary of Vertical Cohesion Prediction Models

Vertical Cohesion Prediction Model	First Three Predictors	$R^2$ Based on Two or Three Predictors	$R^2$ Based on Full Model
M1	Leader Effectiveness Learning Environment Personal Well-Being	.64	.65
M2	Leader Effectiveness Learning Environment Job Satisfaction	.68	.68
M3	Leader Effectiveness Learning Environment	.72	.72
M4	Leader Effectiveness Personal Well-Being Attitude Towards Stability	.65	.65

Table 11  
Summary of Organizational Cohesion Prediction Models

Organizational Cohesion Prediction Model	First Three Predictors	$R^2$ Based on Three Predictors	$R^2$ Based on Full Model
M1	Learning Environment Morale Leader Effectiveness	.70	.71
M2	Learning Environment Morale Leader Effectiveness	.68	.70
M3	Leader Effectiveness Job Satisfaction Learning Environment	.72	.73
M4	Learning Environment Job Motivation Morale	.67	.69

*Horizontal vs. vertical vs. organizational cohesion.* Learning environment was the predictor most associated with horizontal cohesion. Learning environment appeared in all four horizontal

cohesion prediction models and was the dominant predictor in three of the four. Not surprisingly, leader effectiveness dominated vertical cohesion prediction models. Not only did leader effectiveness appear in all four vertical cohesion models, but it was also the dominant predictor in all four models. Learning environment was the most consistent predictor of organizational cohesion, appearing in all four models, and was the dominant predictor in three of the four.

### *Changes in Unit Climate Over Time*

Not only were unit climate ratings related to (predictive of) cohesion, but they also dropped like cohesion over time. This drop varied by duty position for some variables (i.e., leader effectiveness, learning climate, personal well-being, and attitude towards stability) but not for others (i.e., job motivation, job satisfaction, morale and family well-being).

Rating levels for each variable were analyzed using 4 (measurement period; M1-M4) x 2 (duty position; leaders, Soldiers) mixed factorial ANOVAs with repeated measures on the first variable. The results for leader effectiveness revealed significant main effects of measurement period,  $F(3, 1215) = 95.29$ , and duty position,  $F(1, 405) = 10.87$ , as well as a significant Measurement Period x Duty Position interaction,  $F(3, 1215) = 11.71$ . As shown in Figure 3, leaders and Soldiers began with almost identical leader effectiveness ratings but grew steadily apart as the ratings from both groups dropped over time, such that leader effectiveness was eventually rated higher by leaders than by Soldiers.

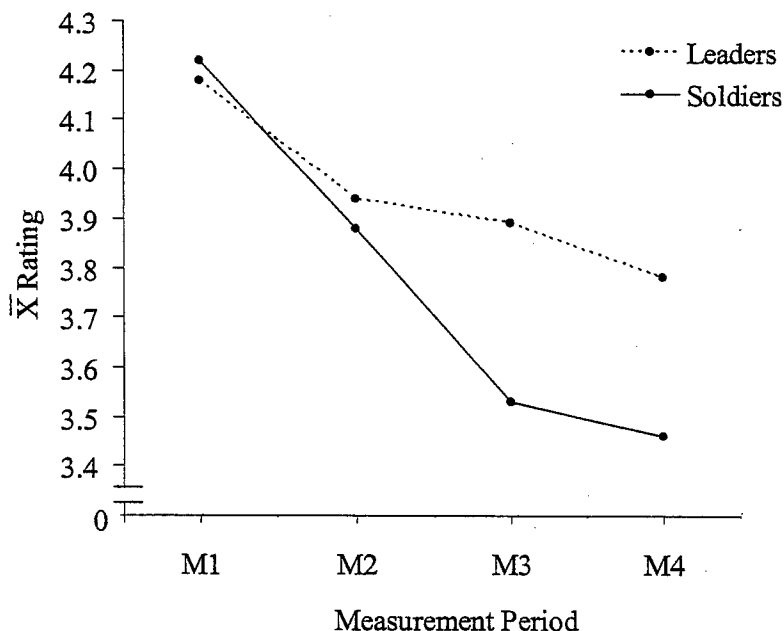


Figure 3. Mean leader effectiveness ratings over time.

The results for learning environment revealed a significant main effect of measurement period,  $F(3, 1281) = 20.96$ , and a Measurement Period x Duty Position interaction,  $F(3, 1281) =$

13.51. As shown in Figure 4, Soldiers perceived their platoon's learning environment to deteriorate over time, whereas leaders did not.

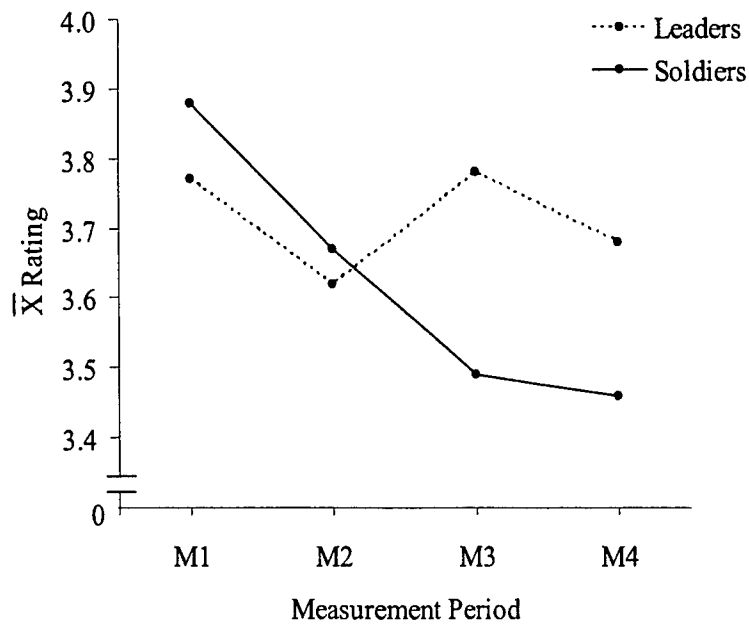


Figure 4. Mean learning environment ratings over time.

The results for personal well-being revealed significant main effects of measurement period,  $F(3, 1269) = 66.43$ , and duty position,  $F(1, 423) = 10.07$ , with no accompanying interaction. As shown in Figure 5, ratings dropped over time for both leaders and Soldiers, but those of the former were always higher than those of the latter.

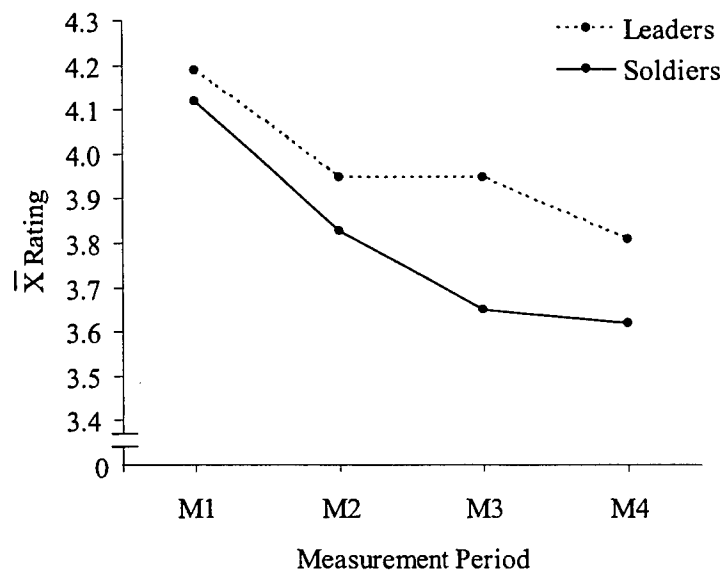


Figure 5. Mean personal well-being ratings over time.

The results for attitude-towards-stability also revealed significant main effects of measurement period,  $F(3, 1524) = 65.96$ , and duty position,  $F(1, 508) = 29.36$ , but no interaction. As shown in Figure 6, both leaders and Soldiers showed less and less acceptance of stability as time wore on. Soldiers, however, reported greater acceptance at every measurement period.

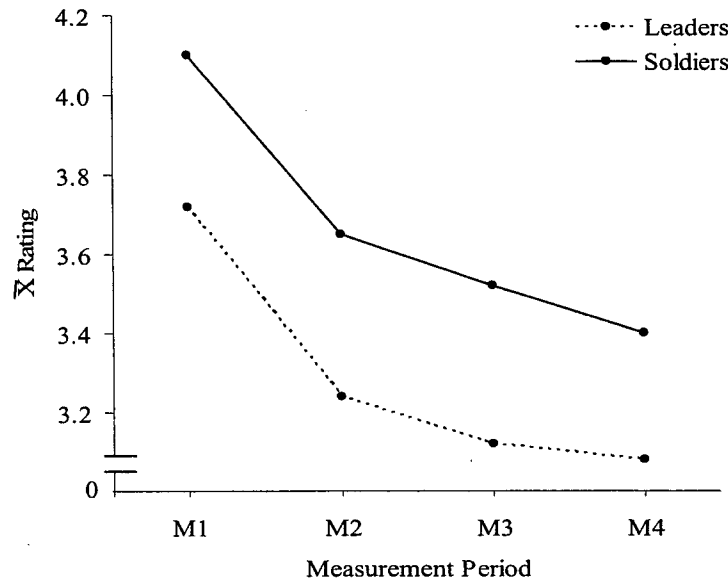


Figure 6. Mean attitude-towards-stability ratings over time.

The results for each of the four remaining unit climate variables (i.e., job motivation, job satisfaction, morale, and family well-being) revealed only a significant main effect of measurement period. (See Appendix B for associated  $F$  values and graphic representations.)

Thus, unit climate variables were not only positively related to cohesion, but their average ratings also dropped (at least from the Soldiers' perspective) like cohesion over 20 months in garrison. These findings provide converging evidence in support of the notion that changes in cohesion may have indeed been caused by changes in unit climate, although causation in the opposite direction cannot logically be ruled out.

### *Question 3: How Are Personnel Turbulence and Cohesion Related Under UFS?*

Our sample started with 78 combat arms platoons. They varied in size from 6 to 46 members, with 18 platoons having fewer than 20 members. In order to minimize the influence of platoon size on cohesion (e.g., Mullen & Copper, 1994), and to ensure generalization of results to combat arms platoons of more typical size, analyses were restricted to turbulence that took place in the remaining 60 platoons with 20 or more members. Turbulence was then measured during the 3-month period preceding both M2 and M3. At M2, 4 of the 60 platoons were dropped because of insufficient information to support interpolation of missing data. Three of these four platoons were then reinstated at M3. The average size of the 56 platoons at M2 was 31 ( $SD = 8.40$ ) while that of the 59 platoons at M3 was also 31 ( $SD = 7.75$ ).

As shown in Table 12, 158 turbulence counts (i.e., Soldiers) were reported during the 3 months preceding M2, and 341 turbulence counts were reported during the 3 months preceding M3, for an increase of 116%. (Presumably, only a small proportion of this increase was accounted for by the greater number of platoons at M3 [59] vs. M2 [56].) Increases occurred across all turbulence types but were most pronounced for Type 4 (intraplatoon) turbulence. (It should be noted that Type 3 [interplatoon] turbulence numbers were divided by 2 to reflect the fact that each occurrence was counted twice, i.e., once by the losing platoon and once by the gaining platoon for each Soldier.)

Table 12  
Amount and Type of Turbulence Preceding Each  
Measurement Period

Turbulence	M2 (n = 56)		M3 (n = 59)	
	Count	%	Count	%
Type 1 (external arrivals/gains)	35	22.2	61	17.9
Type 2 (external departures/losses)	28	17.7	52	15.2
Type 3 (internal interplatoon moves)	67	42.4	133	39.0
Type 4 (internal intraplatoon moves)	28	17.7	95	27.9
Types 1 + 2	63	39.9	113	33.1
Types 3 + 4	95	60.1	228	66.9
Total	158	100	341	100

*The relation between turbulence and cohesion at M2.* As shown in Table 13, the relation between total turbulence and cohesion at M2 was modest in magnitude but consistently positive in direction, indicating that platoons with more turbulence had higher overall, as well as vertical and organizational, cohesion. Of the four types of turbulence, only the relation between Type 3 (interplatoon) and vertical cohesion was significant.

Table 13  
Relation Between Turbulence and Cohesion at M2 (n = 56)

Cohesion	Turbulence Type				
	Total	Type 1	Type 2	Type 3	Type 4
Overall	.38*	.12	.28	.32	.09
Horizontal	.28	.07	.18	.24	.09
Vertical	.39*	.10	.29	.34*	.09
Organizational	.37*	.14	.28	.31	.10

Table 14 shows that horizontal cohesion was unaffected by turbulence at any duty position level, whereas overall, vertical, and organizational cohesion were all significantly related to turbulence at the team leader and/or team member positions.

*The relation between turbulence and cohesion at M3.* Although significantly positive at M2, the relation between turbulence and cohesion at M3 was statistically nonsignificant across the board. Thus, the direct correlation between turbulence and cohesion that was present at M2 (9 months into the unit's lifecycle) had disappeared by M3 (18 months into the unit's lifecycle).



Table 14  
Relation Between Duty Position Turbulence and Cohesion at M2 ( $n = 56$ )

Cohesion	Duty Position				
	Platoon Leader	Platoon Sergeant	Squad Leader	Team Leader	Team Member
Overall	-.03	.05	.10	.42*	.36*
Horizontal	-.10	.08	.03	.32	.29
Vertical	.03	-.01	.11	.43*	.37*
Organizational	-.04	.07	.13	.42*	.35

*Question 4: Is Unit Performance Related to Cohesion?*

To examine the relation between performance cohesion, Soldiers were asked at M4 to rate their platoon's collective task performance on a five-point response scale, with 1 = "very poor" and 5 = "very good," shortly after completing a JRTC rotation in preparation for overseas deployment. Performance ratings, as well as cohesion scores, were then aggregated separately to the platoon level and correlations computed between the two sets of scores. Overall cohesion and JRTC performance ratings were found to be significantly correlated, with  $r(59) = .69$ . Correlations between each of the three cohesion dimensions and JRTC performance ratings were also uniformly positive, with  $r = .60$ ,  $.70$ , and  $.64$  for horizontal, vertical, and organizational cohesion, respectively.

*Question 5: What Lessons Can Be Learned for Enhancing Future UFS Implementation?*

Comments voiced during interviews and focus group discussions, as well as comments entered on the last page of the questionnaire, revealed that personnel stability under UFS was perceived to have both positive and negative consequences.

*Interview and Focus Group Comments*

*The positives.* Stability was perceived to be beneficial, especially in regard to training. Stability was said to give unit members a chance to train together as a team without the drawback experienced under individual manning (i.e., IRS) of having to bring new members constantly "up to speed." Stability also was viewed as providing units with the ability to cross train, better identify specific strengths and weaknesses of unit members, and the opportunity to get to know the job better as a result of UFS emphasis on depth over breadth of experience. Stability was also viewed as having a potential positive impact on families in terms of housing, spousal employment, spousal and dependent education, and community involvement. In addition, stability was anticipated to have a positive impact on unit cohesion over time, despite questionnaire findings to the contrary.

*The negatives.* As mentioned in the interviews and focus group discussions, the primary UFS concerns were related to implementation. As shown in Table 15, the first five of these concerns are UFS specific, whereas the last two are location and unit specific.

Table 15  
Implementation Concerns

UFS Specific
<ul style="list-style-type: none"><li>● Adverse career impact</li><li>● Lack of reliable and timely information</li><li>● Personnel flow mismanagement</li><li>● Disciplinary problems</li></ul>
Location and Unit Specific
<ul style="list-style-type: none"><li>● The "Alaska Factor"</li><li>● The "Stryker Factor"</li></ul>

#### *UFS-Specific Concerns*

*Adverse career impact.* A predominant concern, especially among junior officers and midlevel NCOs, was that personnel stability under UFS would negatively impact career advancement. Being locked into a position longer than usual, having to work one or two levels below rank, receiving insufficient command time, having little room for upward mobility as a result of limited unit size, and the lack of rehabilitative transfer opportunities were all perceived as career-impacting negatives associated with UFS. These concerns, plus the associated fear that promotion boards and branch schools were not being sufficiently informed about the impact of UFS on assignment length and variety and would therefore not take into account the plight (i.e., UFS emphasis on depth vs. breadth) of UFS Soldiers, appeared to weigh heavily on the minds of many interviewees.

*Lack of reliable and timely information.* Interviewees questioned the reliability and timeliness of information provided prior to volunteering for 172d SBCT assignment. Many bemoaned the fact that career decisions (e.g., whether or not to volunteer for a UFS unit assignment) had to be made on short notice based on vague or inconsistent information regarding how UFS would work and what its specific impact would be on them. There were also recurrent complaints that UFS guidelines were then not applied uniformly across ranks (e.g., majors were allowed to transfer out but captains were not; school attendance was allowed for some but not for others).

*Personnel flow mismanagement.* Interviewees perceived that personnel flow was often poorly managed. In many instances, leaders were said not to be in place before their Soldiers arrived for duty. When leaders finally did arrive, they were at too junior a level to be immediately effective. Out-of-sequence arrivals and the perceived inappropriate mix of

personnel were seen as contributing to delays in standard operating procedure development, inadequate Soldier mentoring, and the disruption of training plans.

Interviewees also expressed concern about the inability to purge non-SBCT personnel from their units (i.e., former 172d SIB holdovers who opted not to volunteer for 172d SBCT assignment). As many as 18 months after unit establishment, many non-SBCT personnel were still on site despite the UFS implementation plan calling for their timely transfer. These holdovers were resented by Soldiers who had volunteered for 172d SBCT assignment, and the holdovers themselves resented still being on site when they had been promised otherwise. The latter were seen as using up limited unit resources and requiring training that would never benefit the unit after deployment because holdover troops were not expected to deploy. In some instances, holdovers were said to be disrupting cohesion because of their bad attitudes and uncooperative dispositions.

*Disciplinary problems.* Interviewees reported that, because of UFS, "rehab" transfers were less available as an option to move problem Soldiers to other units to "start over." Drug problems were reported as especially troublesome, though in the absence of comparative data it was impossible to judge how much of this problem was traceable to UFS vs. other potential causes, such as Alaska's geographical isolation and harsh climate or the impending overseas deployment. Disciplinary problems were said to have been exacerbated when Soldiers arrived in large numbers before leaders were on site. And finally, interviewees perceived that leaders were reluctant to discharge Soldiers for any reason when it was unknown if or when a replacement would arrive.

#### *Location- and Unit-Specific Concerns*

*The Alaska factor.* The challenges associated with being stationed in Alaska were apparent from the start and became more so as time wore on. At first, there was tacit recognition that these challenges would have to be overcome. Eighteen months later, however, the inhospitable Alaskan climate had taken its toll on training schedules. Virtually every leader admitted that the severe cold weather in the winter and the lack of darkness in the summer severely exacerbated training challenges. The climate posed special problems for Stryker vehicles, whose hydraulic braking systems became virtually inoperative when winter temperatures dipped to seasonal extremes.

The infrastructure in Alaska was also cited repeatedly as inadequate to accommodate the rapid standup of an SBCT-sized unit. Barracks space was said to be in short supply for incoming Soldiers. Barracks that had been condemned the previous year, and reportedly slated for demolition, were returned to service. This resulted in substandard living conditions for many junior enlisted Soldiers. Inadequate heating, plugged latrines, and pervasive overcrowding (i.e., 4 Soldiers per room) were frequent complaints. Interviewees also complained about slow in processing upon arrival and the negative training impact of live fire range and maneuver area limitations.

*The Stryker factor.* Lack of equipment, partially associated with the unit's transition from SIB to SBCT status, was also seen as having a negative impact on training. Missing equipment ranged from cold weather gear, helmets, and canteens to individual weapons in the infantry battalions, to Stryker vehicles themselves. Late delivery of the latter, coupled with other equipment shortages and bad weather, made every training exercise a challenge and virtually precluded the realization of an accretive collective training program capable of leveraging the unique advantages of a stabilized personnel base.

#### *Last Page Comments*

The last page of each questionnaire form invited respondents to enter written comments on issues that concerned the respondents or their families. Comments were coded and tallied at each of the four questionnaire administrations. In general, concerns entered on the last questionnaire page echoed those voiced in the interviews and focus group discussions. Questionnaire respondents complained, for example, about the potential negative impact of UFS on career development, disrespectful leaders, the need for better housing and training areas, the need for more collective training opportunities, the lack of cold weather gear, delays in Stryker vehicle fielding, the inhospitable Alaskan climate, and problems transitioning from SIB to SBCT status while undergoing UFS manning (see Appendix C for more detail).

#### Discussion

This assessment was conducted to answer five questions. The answer to each is provided and discussed in turn below. Although the lack of control and use of correlational data prevented definitive cause and effect conclusions, some speculation is offered to explain the findings.

##### *Question 1. How Did Cohesion Develop Over the Lifecycle of the UFS Unit?*

*Answer 1. Horizontal, vertical, and organizational cohesion all started out high and then dropped over the 20-month garrison phase of the 172d SBCT's lifecycle, with the drop being steeper for vertical and organizational than for horizontal cohesion.*

The generally high initial levels of cohesion were likely the result of a "honeymoon" effect (Siebold, 1989), where Soldiers had high initial expectations that their peers and leaders would be caring, competent, and mission oriented, and that their units would be capable of providing a rational environment of rules and regulations compatible with adherence to Army standards/values, of meeting the physical needs and personal goals of unit members, and of delivering rigorous and challenging (i.e., accretive/progressive) training. Without evidence to the contrary, these expectations seemed to have prevailed early on in the supporting unit's lifecycle and resulted in perceived high levels of horizontal, vertical, and organizational cohesion.

As time wore on, however, these expectations were perceived to be overly optimistic, and all three dimensions of cohesion dropped accordingly. Horizontal cohesion dropped, presumably, because not all unit members were committed to each other's welfare, to unit membership, or to their unit's mission. Former SIB holdovers just wanted out. In addition, teamwork development

suffered because of limited collective training opportunities, especially early on in the unit's lifecycle. The drop in horizontal cohesion may not have been as steep as that found for the other two dimensions, however, because of bonding that likely occurred among some peers as a result of common exposure to external stress. Given that one of the primary functions of cohesion is to help sustain individuals and groups under times of stress (Griffith & Viatkus, 1999; Shils & Janowitz, 1948), the hardships imposed by poor housing conditions and an inhospitable training environment, for example, may have helped to slow the rate of decline in horizontal cohesion over time, at least compared to that found for the other two dimensions.

In contrast, the drop in vertical cohesion revealed that the initial bond between Soldiers and leaders deteriorated over time in garrison. This drop may have occurred partly because leaders were unable to either demonstrate their technical proficiency within the highly constrained collective training environment or keep Soldiers gainfully occupied while awaiting equipment delivery and climate moderation. Indeed, stabilized Soldiers tend to demand more of a leader over time to provide challenging training and to reduce detractors (Towell, 2005). Soldiers in the 172d SBCT appeared to blame the inability to meet these demands, and the ensuing boredom and detracting "ash and trash" details, on their leaders. As a result, vertical cohesion suffered considerably as time wore on.

Organizational cohesion suffered the worst drop of all, presumably, because the unit was also unable to live up to Soldier initial expectations. As time went on, Soldiers perceived that UFS guidelines were not being consistently applied (e.g., some Soldiers were allowed to leave while others were not; former 172d SIB soldiers were held over much longer than planned) and that disciplinary rules were not being universally enforced (e.g., problem Soldiers were not purged immediately from the unit for fear that replacements would not be forthcoming). Soldiers also perceived their units as being incapable of meeting their physical (e.g., adequate housing) and operational/developmental (e.g., training) needs. So, along with blaming their leaders, Soldiers blamed their unit (and the Army) for doing little if anything about their plight. Consequently, organizational cohesion dropped over time as well.

These findings are generally consistent with those reported by investigators of cohesion under Project COHORT (e.g., Furukawa, et. al., 1987). As such, they underscore the past conclusion of others (e.g., Scull, 1990; Thurman, 1989; Towell, 2005) that keeping Soldiers together in the same unit for a protracted period of time (e.g., under UFS) is insufficient to enhance small-unit cohesion. The answer to the next question provides some insight into how cohesion might be enhanced within a UFS environment.

*Question 2. What Variables Were Related to (and Possibly Influenced) Cohesion Over the 172d SBCT's lifecycle?*

*Answer 2. Unit climate variables were related to cohesion; Soldier demographic variables were not, or at least not to the same degree as the former. Cohesion was best predicted on the basis of the unit climate variables of leader effectiveness and learning environment.*

All measured unit climate variables were found to be positively related to overall cohesion and its three dimensions, especially vertical and organizational cohesion, with correlations falling in the moderate to high range for leader effectiveness, learning environment, job satisfaction/motivation, and morale. Thus, for example, the more leaders were viewed as effective (e.g., the more they looked out for the welfare of their Soldiers and their families, encouraged teamwork, were friendly, approachable, and respectful of others, knew Army doctrine and tactics, maintained high standards for unit performance, and kept subordinates informed), or the unit environment was seen as learning conducive (e.g., Soldiers were given responsibility for their work, encouraged to do things on their own even if they made mistakes, provided with sufficient access to career development activities, and were the source of leader confidence), the higher cohesion was reported to be. Demographic variables (e.g., age, unit, and time in service), in contrast, held little associative value with cohesion (Siebold & Lindsay; 1999). As a result, future Army interventions designed to promote cohesion in a stabilized environment should target unit climate variables for maximum payoff.

The best models for predicting overall cohesion, as well as its three dimensions, across time in garrison consistently included the two unit climate variables of leader effectiveness and learning environment. The notion that unit climate is an overarching determinant of unit cohesion is not new (e.g., Bartone & Adler, 1999; Gal, 1986), nor is the notion that effective leadership is the key to unit cohesion (e.g., Bartone & Kirkland, 1991; Henderson, 1985; Siebold & Lindsay, 1999). Consequently, there is no shortage of leadership-oriented recommendations on how to best promote cohesion (e.g., Headquarters, Department of the Army, 1999; Henderson, 1985; Johns, 1984; McDonald, 1994; Siebold, 1989). Johns (1984), for example, has provided a comprehensive lists of cohesion building techniques. He specifically suggests, for example, that leaders:

- Get actively involved with their troops (e.g., be visible, especially in times of stress and inclement weather),
- Do as many things together as possible without forcing participation,
- Schedule unit activities (e.g., intramural sports) to engender competition and unit identification,
- Emphasize unit uniqueness by using crests, patches, slogans, etc.,
- Conduct tough, realistic training and be aware of progress,
- Praise in public but criticize in private,
- Induct new unit members in systematic ways (e.g., welcome letters, dedicated sponsors, welcome packets, formal introduction at formations),
- Include families where appropriate,
- Show genuine concern for subordinates (e.g., listen well to what they say when they ask for help),
- Keep them well informed of plans and progress,
- Be loyal upward and downward,
- Demonstrate ethical behavior,
- Emphasize discipline and respect, and
- Be technically competent.

As suggested by Siebold (1989), leaders can also go on to promote a strong learning environment by providing Soldiers with guidance and direction when assigning new duties, encouraging them to act on their own without fear of mistakes, providing challenging, mission-relevant training, keeping standards high, recognizing good performance, developing subordinates, opening communication channels, administering needed discipline, and acting as a positive role model. Thus, interventions (e.g., training) designed to enhance both leader effectiveness and learning environment should also promote cohesion. Based on the order of variable entry into our predictive models, leader effectiveness is likely to have a greater impact on vertical and organizational cohesion, whereas learning environment is likely to have a greater impact on horizontal cohesion. In addition, given that both leader effectiveness and learning environment were consistently among the top cohesion predictors across measurement periods, interventions designed to enhance either variable are likely to have a beneficial impact on cohesion when applied anytime during a UFS unit's time in garrison.

The above recommendations are applicable to nonstabilized, as well as stabilized units. Leaders of the latter, however, need also be readily capable of taking advantage of accretive (i.e., progressive) training opportunities created by having the same Soldiers together for prolonged periods of time. Without such training, cohesion is likely to drop because Soldiers increasingly perceive that they are not fully using their skills, adding to their promotion opportunities, or preparing for a mission not as meaningful as they might have once thought.

*Question 3. Were Turbulence and Cohesion Related Under UFS?*

*Answer 3. The relation between turbulence and cohesion was generally positive when turbulence occurred relatively early in the unit's lifecycle and was not excessive.*

Despite expectations to the contrary by many (e.g., Thurman, 1989; Towell, 2005), but not all (Oliver, 1988), horizontal cohesion was found to be unrelated to turbulence, at least in the amounts measured in this assessment. In contrast, vertical and organizational cohesion were found to increase as turbulence increased (i.e., were positively related) early in the unit's lifecycle during the 3 months preceding M2. This was not found to be the case, however, later on during the 3 months preceding M3.

Two potential explanations of these findings are suggested. First, early turbulence may have been positively related to vertical and organizational cohesion because leaders and units finally began in earnest to (a) purge nonpermanent SIB holdovers and their associated negative influence, and (b) place the right people (e.g., team leaders) in the right units/duty positions, a step likely to have been viewed by most as necessary for achieving future mission success. Once this initial wave of transfers and duty position changes was over, however, and platoons took on a more distinct identity, turbulence was no longer perceived as beneficial to unit integrity or future performance. Thus, vertical and organizational cohesion may actually be enhanced by turbulence, but only if it occurs relatively early in a stabilized unit's lifecycle.

Second, early turbulence may have also been perceived as beneficial because it was relatively light. Thus, the drop in the relation between turbulence and cohesion between M2 and M3 may

have been caused by the increased level of turbulence experienced between the two measurement periods. Thus, turbulence may be viewed as a good thing as long it does not become excessive.

More research is needed in the future to identify the separate contributions of turbulence amount and timing to the temporal course of cohesion development. Until such work is completed, the present data can be interpreted to suggest that a little turbulence early on in a stabilized unit's lifecycle may be beneficial to cohesion development, whereas this benefit may be negated if turbulence becomes excessive later on. Thus, the goal of eliminating most turbulence in a UFS unit may not be such a good idea. A better goal might be to minimize turbulence after a particular point in a unit's lifecycle. Exactly how much turbulence is best, and when or where the cut-off point should be set, remain questions for future research.

*Question 4. Was Cohesion Related to Unit Performance?*

*Answer 4. Yes. Cohesion and performance were positively related.*

The importance of cohesion is undeniable, as indicated by the positive relation between cohesion and performance found at M4. This relation was stronger than that typically reported by others (e.g., Mullen & Copper, 1994; Oliver, et. al., 1999) and likely to be either the result of using a surrogate measure of performance (i.e., response to a questionnaire item) coupled with reliance on questionnaire respondents to rate both cohesion and performance (e.g., Oliver, 1999), or the result of UFS emphasizing depth over breadth of experience while personnel are stabilized. Despite the difference in magnitude, the direct nature of the relation between cohesion and performance is consistent with past research and supportive of the Army's expectation that enhanced cohesion will lead to enhanced performance. Research by Mullen and Copper (1994) supports this conclusion and the notion that the impact of performance on cohesion is bidirectional (i.e., successful performance also promotes cohesion). Thus, future efforts by the Army to promote unit performance through conduct of challenging, accretive/progressive training, made possible by the stabilization of leaders and Soldiers under UFS, are not only likely to have the intended positive impact on performance, but also an associated positive impact on cohesion.

*Question 5. What Lessons Were Learned for Enhancing Future UFS Implementation?*

*Answer5. The concerns expressed by leaders and Soldiers during interviews and focus group discussions were interpreted to suggest the following recommendations for enhancing future UFS implementation:*

- Establish clear and firm UFS guidelines.
- Provide sufficient lead time for the understanding of these guidelines, and their implications, before Soldiers are required to make career-impacting decisions.
- Disseminate guidelines to subordinate units, and indicate the importance of adherence.
- Apply guidelines uniformly across ranks to avoid the appearance of favoritism—a perception that negatively impacts morale.



- Develop guidelines for fielding the proper mix of junior- and senior-level personnel at unit start up, and for rotating personnel within the unit thereafter.
- Develop software specifically designed to track both external (i.e., turnover) and internal turbulence.
- Share UFS guidelines with branch schools and promotion boards to help ensure that career advancement is not negatively impacted by UFS emphasis on depth over breadth of experience.
- Identify ways to relieve junior officers and midlevel NCOs of the concern that stability under UFS will negatively impact career advancement.
- Purge all nonpermanent personnel immediately upon UFS unit establishment.
- Develop sustainment plans for post-deployment implementation, and publish them early on.
- Ensure that leaders, equipment, infrastructure, and standard operating procedures are in place before Soldiers arrive for duty.
- Ensure Stryker vehicles are engineered to function properly in severe cold weather or consider their use elsewhere.

Of course, these recommendations were based on issues of concern at the time of their mention. Since then, the Army has already begun to respond to some recommendations by solidifying UFS guidelines (Headquarters, Department of the Army, 2006) and providing post-lifecycle guidance well in advance of the 172d SBCT's scheduled lifecycle reset. Other recommendations may prove tougher (e.g., developing guidelines for fielding the proper mix of junior- and senior-level personnel at unit start up and for rotating personnel within the unit thereafter) and are likely to take longer to address.

### Conclusions and Future Directions

With the answers to the above five questions in hand, and collaborative evidence from other sources, the Army can now be reasonably confident that (a) without effective leadership and a positive learning environment, small-unit (platoon-level) cohesion (especially vertical and organizational) is likely to drop over time in garrison despite heightened personnel stability under UFS, (b) cohesion is likely to benefit from turbulence as long as it is not excessive and occurs relatively early in the unit's lifecycle, (c) higher cohesion should result in enhanced performance and vice versa, and (d) compliance with lessons learned recommendations should help lead the way to improved UFS implementation in the future

In the next report of this series, analyses will extended to include questionnaire-only data collected during the overseas employment phase (i.e., deployment + 6 months) of the 172d SBCT's scheduled 36-month operational lifecycle. Using the M4 data collected in garrison as the baseline, changes in small-unit cohesion that occur during mid-employment (M5) will be tracked, variables that are likely to enhance or detract from these changes will be identified, and additional lessons learned for improving future UFS implementation will be documented.



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## Appendix A

### Cohesion Prediction Models

Using iterative stepwise multiple regression routines, prediction models were developed for overall cohesion, horizontal cohesion, vertical cohesion, and organizational cohesion at four points in time (M1-M4), creating a total of 16 models. Variables used in constructing these models included all unit climate or demographic variables with a significant relation to the criterion. Relatively complete data were available on all predictors except one: the family well-being scale. This state of missing data came about because family well-being items were asked only of respondents with direct knowledge of the relevant issues (spousal employment, childcare, non-government housing, etc.). Since many CA platoon members were young, unmarried males, a low proportion of them completed this section of the questionnaire.

SPSS multiple regression routines handle missing data in a variety of ways. The most common method is list-wise deletion of records with missing data. That is, if a respondent has missing data on any predictor, all of that respondent's data are eliminated from the analysis. When family well-being data were made available as predictors, as many as 50% of Soldiers (those who had not completed the family well-being section of the questionnaire) were eliminated.

Thus, analyses could be based on the broadest base of available respondents by withholding one predictor (family well-being) or on the broadest base of predictor items by elimination as many as half the respondents. The dilemma was resolved by conducting analyses both ways. First, the family well-being predictor was withheld and models were developed using the broadest base available. Then, family well-being was added to the pool of potential predictors and the models were redeveloped with a substantially reduced base.

Prediction models from both approaches were highly comparable. Importantly, the family well-being predictor was not selected for inclusion in any model even when it was made available. In the following, therefore, only the first approach, which omitted the family well-being unit climate variable, but included data from all eligible respondents, is reported.

#### *M1 Overall Cohesion Prediction Model.*

Four M1 predictors entered the equation before the iterative stepwise process terminated. Variables are listed in Table A-1 in the order they entered the prediction model. All listed variables significantly enhanced the model, but learning environment was the dominant predictor, entering the equation first and accounting for 87% (.62/.71) of all predicted variance in the full 4-predictor model. The first three variables (learning environment, leader effectiveness, and morale) to enter the overall cohesion M1 equation formed a parsimonious model, accounting for 99% (.70/.71) of all predicted variance in the full 4-predictor model.

Table A-1  
M1 Overall Cohesion Prediction Model ( $n = 386$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Learning Environment	.79	.62	.62	636.00	.40	.44
Leader Effectiveness	.82	.68	.05	63.72	.26	.27
Morale	.84	.70	.03	33.26	.09	.15
Personal Well-Being	.84	.71	.00	5.36	.10	.10

*M2 Overall Cohesion Prediction Model*

Variables made available to the M2 prediction model consisted of all unit climate variables (except family well-being), and the two demographic variables (prior SIB membership and expected years of service) with significant zero-order correlations with the M2 cohesion criterion. For the M2 model, five unit climate variables entered the equation before the iterative stepwise process terminated. All statistically significant predictors are listed in Table A-2 in the order they entered the equation. The top three variables were unchanged from the M1 model. Moreover, these three variables entered the M2 equation in precisely the same order as at M1. Learning environment accounted for 86% (.60/.70) of all predicted variance in the full 5-predictor model. The first two predictors, learning environment and leader effectiveness, accounted for 94% (.66/.70) of all predicted variance. And the first three variables produced a parsimonious prediction model, accounting for 97% (.68/.70) of all predicted variance in the full 5-predictor model.

Table A-2  
M2 Overall Cohesion Prediction Model ( $n = 396$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Learning Environment	.77	.60	.60	585.22	.30	.31
Leader Effectiveness	.81	.66	.06	65.88	.32	.34
Morale	.83	.68	.03	32.18	.09	.14
Job Motivation	.83	.69	.01	15.54	.20	.16
Attitude Towards Stability	.84	.70	.00	4.04	.04	.06

*M3 Cohesion Prediction Model*

Five predictors entered the M3 model, all of them unit climate variables. Statistically significant predictors are listed in Table A-3 in order of their entry into the equation. Leader effectiveness emerged as the dominant M3 predictor, supplanting learning environment which fell to the number two predictor. Leader effectiveness accounted for 88% (.65/.73) of all predicted variance in the full 5-predictor model. Once again, the first three variables produced a parsimonious prediction model, accounting for 99% (.72/.73) of all predicted variance in the full 5-predictor model.



Table A-3  
M3 Overall Cohesion Prediction Model ( $n = 347$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Leader Effectiveness	.81	.65	.65	636.49	.35	.40
Learning Environment	.84	.70	.05	62.74	.28	.31
Morale	.85	.72	.02	24.18	.08	.12
Job Motivation	.85	.73	.01	9.10	.16	.11
Attitude Towards Stability	.86	.73	.00	4.54	.04	.06

*M4 Overall Cohesion Prediction Model*

Five predictors entered the M4 model, but as with all previous models, the first three predictors dominated the equation, in this case accounting for 97 (.66/.68) of all predicted variance in the full 6-predictor model and producing an admirably parsimonious model (see Table A-4).

In common with previous models, leader effectiveness and learning environment were among the top three predictors, but morale, which was the third best predictor in all three previous models, was conspicuously absent in the list of M4 predictors. Not only was morale not among the leaders at M4, it was not even selected for inclusion in the model. Examination of Table 7 zero-order coefficients of correlation between the predictors and the criterion reveals a reduction in the strength of relation between morale and cohesion between M3 and M4. It is unclear why this reduction occurred but the reduction may be related to morale's disappearance at M4 from the list of significant M4 cohesion predictors.

Table A-4  
M4 Overall Cohesion Prediction Model ( $n = 390$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Leader Effectiveness	.78	.60	.60	585.77	.32	.38
Job Motivation	.81	.65	.05	55.27	.20	.18
Learning Environment	.82	.67	.02	26.81	.23	.25
Attitude Towards Stability	.83	.68	.01	9.33	.05	.08
Personal Well-Being	.83	.69	.00	5.49	.09	.10

*The Remaining Prediction Models*

The specifications for each of the twelve remaining predictive models (i.e., four each for horizontal, vertical, and organizational cohesion) are listed below in Tables B-5 through B-12.

Table A-5  
M1 Horizontal Cohesion Prediction Model ( $n = 386$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Learning Environment	.59	.35	.35	205.02	.54	.50
Morale	.60	.37	.02	10.00	.12	.16

Table A-6  
M2 Horizontal Cohesion Prediction Model ( $n = 400$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Learning Environment	.56	.31	.31	179.52	.28	.25
Leader Effectiveness	.59	.34	.03	19.53	.31	.28
Job Motivation	.60	.36	.01	7.26	.22	.14

Table A-7  
M3 Horizontal Cohesion Prediction Model ( $n = 353$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Learning Environment	.57	.33	.33	171.96	.48	.47
Job Motivation	.59	.35	.02	8.71	.24	.16

Table A-8  
M4 Horizontal Cohesion Prediction Model ( $n = 391$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Leader Effectiveness	.57	.32	.32	185.84	.28	.30
Job Motivation	.59	.35	.03	16.06	.22	.17
Learning Environment	.60	.36	.01	7.00	.20	.20

Table A-9  
M1 Vertical Cohesion Prediction Model ( $n = 386$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Leader Effectiveness	.77	.59	.59	548.93	.53	.49
Learning Environment	.79	.63	.04	42.13	.34	.33
Personal Well-Being	.80	.64	.02	16.45	.17	.16
Job Motivation	.81	.65	.01	5.61	-.14	-.09
Job Satisfaction	.81	.65	.00	4.21	-.11	-.12
Morale	.81	.65	.01	5.43	.08	.11

Table A-10  
M2 Vertical Cohesion Prediction Model ( $n = 394$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Leader Effectiveness	.79	.63	.63	667.87	.57	.51
Learning Environment	.82	.67	.04	42.92	.21	.19
Job Satisfaction	.83	.68	.01	16.05	.12	.13
Job Motivation	.83	.68	.00	4.86	.13	.09

Table A-11  
M3 Vertical Cohesion Prediction Model ( $n = 390$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Leader Effectiveness	.83	.70	.70	790.49	.65	.63
Learning Environment	.85	.72	.02	25.86	.28	.26

Table A-12  
M4 Vertical Cohesion Prediction Model ( $n = 390$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Leader Effectiveness	.80	.64	.64	691.96	.72	.72
Personal Well-Being	.81	.65	.01	9.41	.11	.10
Attitude Towards Stability	.81	.65	.01	5.34	.05	.07

Table A-13  
M1 Organizational Cohesion Prediction Model ( $n = 386$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Learning Environment	.76	.62	.62	614.86	.39	.42
Morale	.81	.66	.05	54.12	.10	.14
Leader Effectiveness	.83	.69	.02	26.15	.19	.18
Job Satisfaction	.83	.69	.01	8.34	.10	.12
Personal Well-Being	.83	.70	.00	4.80	.10	.10

Table A-14  
M2 Organizational Cohesion Prediction Model ( $n = 398$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Learning Environment	.76	.57	.57	523.42	.34	.34
Morale	.79	.63	.06	62.65	.13	.19
Leader Effectiveness	.80	.65	.02	20.07	.21	.22
Job Motivation	.81	.66	.01	16.78	.22	.17
Attitude Towards Stability	.82	.66	.01	7.43	.06	.09

Table A-15  
M3 Organizational Cohesion Prediction Model ( $n = 349$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Leader Effectiveness	.76	.58	.58	476.79	.31	.33
Job Satisfaction	.81	.65	.07	68.10	.12	.13
Learning Environment	.82	.67	.02	23.37	.23	.23
Morale	.83	.69	.02	15.86	.10	.15
Job Motivation	.83	.69	.01	8.46	.18	.13

Table A-16  
M4 Organizational Cohesion Prediction Model ( $n = 390$ )

Predictor Variable	$R$	$R^2$	$R^2$ Change	$F$ Change	Unstand- ardized $B$	Standar- dized $B$
Learning Environment	.73	.54	.54	449.71	.25	.26
Job Motivation	.78	.60	.07	65.97	.26	.21
Morale	.79	.62	.02	19.07	.08	.13
Leader Effectiveness	.80	.64	.01	13.62	.16	.18
Attitude Towards Stability	.80	.64	.01	5.82	.05	.08
Job Satisfaction	.80	.64	.00	4.22	.09	.11
Expected Years of Service	.81	.64	.00	4.28	.02	.07

## Appendix B

### Unit Climate Variable Ratings Over Time

The results of separate 4 (measurement period) x 2 (duty position) mixed factorial ANOVAs, with repeated measures on the first variable, conducted on the four remaining unit climate variables revealed only a significant main effect of measurement period for each; job motivation,  $F(3, 1332) = 40.15$  (Figure B-1), job satisfaction,  $F(3, 1302) = 77.94$  (Figure B-2), morale,  $F(3, 1374) = 64.08$  (Figure B-3), and family well-being,  $F(3, 312) = 6.33$  (Figure B-4).

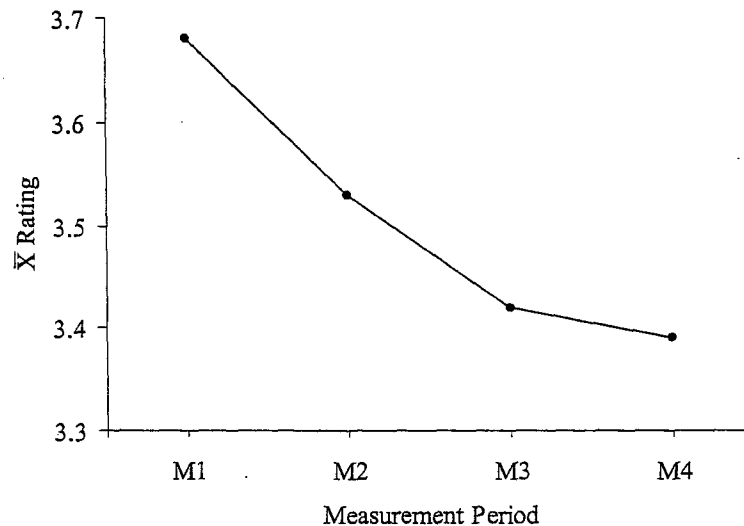


Figure B-1. Mean job motivation rating at each measurement period.

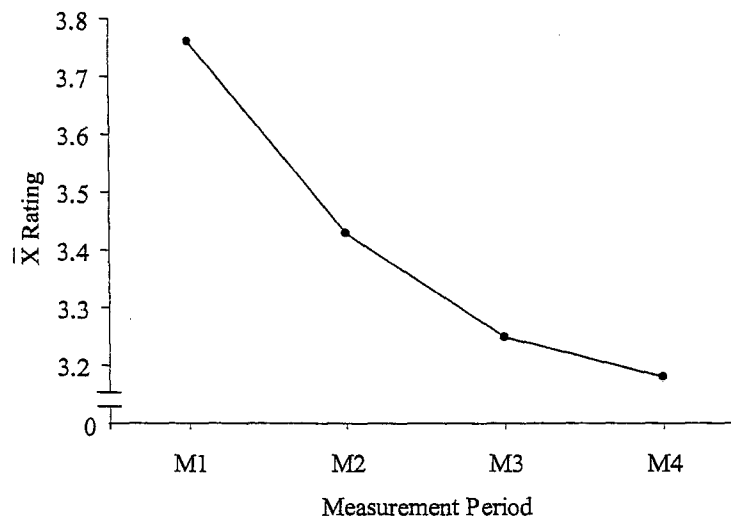


Figure B-2. Mean job satisfaction rating at each measurement period.

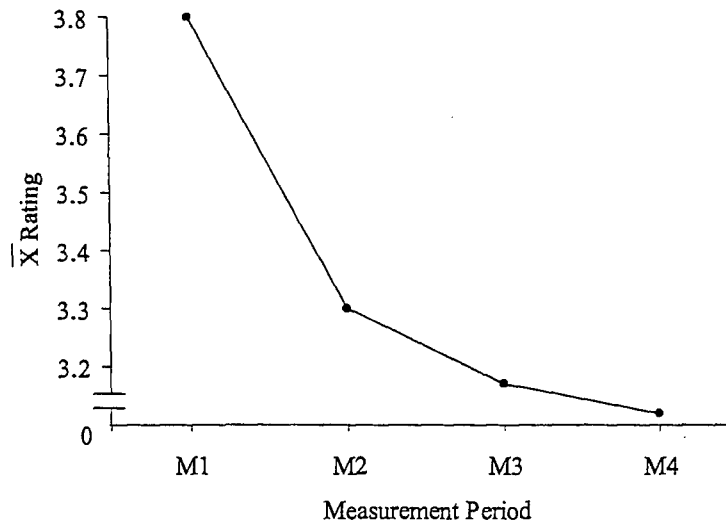


Figure B-3. Mean morale rating at each measurement period.

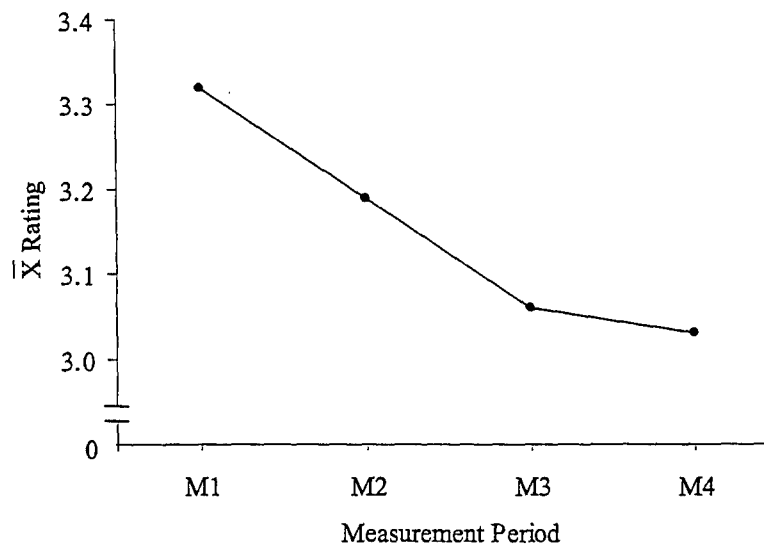


Figure B-4. Mean family well-being rating at each measurement period.

## Appendix C

### "Last Page Comments"

The last page of each questionnaire invited respondents to comment on issues of concern to them or to their families. These comments were coded and tallied after each questionnaire administration (i.e., measurement periods; M1-M4). Table C-1 presents the five most frequently mentioned areas of concern at each administration. The top five areas of concern accounted for 71% of comments, while the remaining 29% of comments were scattered across numerous miscellaneous topics. At M1, 417 respondents (17% of all those with completed questionnaires) submitted written comments. The most frequently mentioned concern was related to housing/infrastructure (i.e., cold, dilapidated, or overcrowded barracks, unavailable or substandard family housing, and inadequate post facilities). Training was the next most frequently cited area of concern with the main complaint being that there was not enough of it. Respondents also complained about missing (i.e., weapons, cold weather gear) and inoperable (i.e., Stryker vehicles) equipment that prevented the scheduling of some training events. The third most frequently cited concern was lack of respect or pride in Army traditions. The majority of these comments made reference to leaders not according Soldiers the respect they deserved. Career development, particularly how it might be negatively impacted by UFS, was the fourth most frequently cited concern, and the number five concern was the difficulty that the unit was experiencing in making the transition from SIB to SBCT status. Most SBCT transition concerns focused on Fort Wainwright's inability to accommodate smoothly the sudden influx of troops.

Housing remained the top concern at M2, but thereafter it slipped to the fourth position and the number of respondents commenting specifically on housing/infrastructure issues dropped from 95 (at M2) to 54 (M3) to 26 (M4). No telling if this drop occurred because housing conditions improved across time, because respondents simply tired of complaining, or because other concerns supplanted housing in importance.

Training was the second most frequently mentioned issue at M1 and M2, and it became the top concern as the unit began to approach deployment (i.e., at M3 and M4). The primary training-related concern at every measurement period was an alleged general insufficiency of training. Many respondents attributed this to the "Alaska factor," or the general difficulty of accomplishing training in the harsh Alaskan climate where winter temperatures can dip to -70 degrees (Fahrenheit) and temperatures in the range of -35 to -40 degrees are commonplace. They also cited insufficient and poorly suited live-fire ranges and maneuver areas.

Career development and lack of respectful treatment issues remained of relatively high concern over the 2-year garrison period, moving from third and fourth positions in the M1-M2 interval to second and third positions in the M3-M4 period.

The fifth biggest concern at M1, mentioned in written comments by 34 respondents, was the difficulty the unit was having in making the transition from SIB to SBCT status. By M2, however, this issue had dropped off the list of top five concerns and was cited by only five respondents. By M3, the issue had disappeared altogether. Lack of equipment was a major concern at M2, with 56 specific mentions, but this issue was cited by only 14 respondents at M3 and by 16 respondents at M4. Interview results indicated that Stryker vehicles were not available until after M2 and that the arrival of this long-awaited mission platform did much to allay missing equipment concerns. The only new concern to make the top-five list in the M3-M4 measurement period was low morale.

Table C-1  
Most Frequently Cited Areas of Concern

M1	M2	M3	M4
417 Soldiers (16.5%) 2,505 Questionnaires	489 Soldiers (16.2%) 3,011 Questionnaires	392 Soldiers (13.6%) 2,880 Questionnaires	383 Soldiers (14.8%) 2,586 Questionnaires
Housing (93)	Housing (95)	Training (85)	Training (73)
Training (61)	Training (79)	Career Develop. (71)	Respect (62)
Respect (55)	Respect (66)	Respect (64)	Career Develop. (52)
Career Develop. (50)	Career Develop. (65)	Housing (54)	Housing (26)
SBCT Transition (34)	Lack of Equip. (56)	Morale (36)	Morale (25)